REMARKS

Applicants respectfully request reconsideration of this application as amended. Claims 1-40 are pending in the application. Claims 1, 7, 13, 19, 25, and 30 have been amended. Claims 35-40 have been added. No claims have been canceled.

Applicants have amended the claims to more clearly point out what Applicants regard as their invention. Specifically, Applicants have amended claims 1, 7, 13, 19, 25, and 30 to clarify that the stream ID is stored outside the cache array. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. No new matter has been added.

The Examiner rejected claims 1-34 under 35 U.S.C. § 102(b) as being anticipated by Cai et al (U.S. Patent No. 6,349,363) ("Cai"). Applicants respectfully disagree.

Cai discloses a technique in which "the cache controller selects <u>one</u> of the P-caches based on a comparison of the EID provided by a request and <u>the EID values stored in the storage elements</u>." (Cai column 5, lines 56-59) (emphasis added)

With respect to independent claim 1 in the presently claimed invention, Applicants teach and claim as amended:

"A method, comprising:

partitioning a cache array into one or more special-purpose entries and one or more general-purpose entries, wherein special-purpose entries are only allocated for one or more streams having a particular stream ID, <u>wherein the stream ID is stored outside the cache array</u>." (emphasis added)

Applicants teach a technique that is different from the technique taught in Cai. In Applicants' technique, the stream ID is stored outside the cache array. In one embodiment, this allows the sub-caches to have cross interaction and allows a stream to access data from a sub-

cache that does not belong to the stream. This interaction allows a given stream to utilize other

sub-caches in the case where other sub-caches may contain data required by the stream. In Cai,

the EID is stored within the cache. Thus, only one sub-cache may be selected for a given EID,

which prevents cross interaction between various sub-caches. Therefore, Cai does not teach the

presently claimed invention where the stream ID is stored outside the cache array. Thus, because

Cai does not teach the presently claimed invention, Applicants respectfully submit that Cai does

not anticipate claim 1.

Claims 2-6 are dependent upon claim 1. Thus, for at least the same reasons advanced

above with respect to independent claim 1, Applicants respectfully submit that Cai does not

anticipate claims 2-6.

With respect to independent claim 7 in the presently claimed invention, Applicants teach

and claim as amended:

"A device comprising:

a cache memory array partitioned into one or more special-purpose entries and

one or more general-purpose entries, wherein special-purpose entries are only allocated

for one or more streams having a particular stream ID, wherein the stream ID is stored

outside the cache array." (emphasis added)

Applicants teach a technique that is different from the technique taught in Cai. In

Applicants' technique, the stream ID is stored outside the cache array. In one embodiment, this

allows the sub-caches to have cross interaction and allows a stream to access data from a sub-

cache that does not belong to the stream. This interaction allows a given stream to utilize other

sub-caches in the case where other sub-caches may contain data required by the stream. In Cai,

the EID is stored within the cache. Thus, only one sub-cache may be selected for a given EID,

which prevents cross interaction between various sub-caches. Therefore, Cai does not teach the

presently claimed invention where the stream ID is stored outside the cache array. Thus, because

Cai does not teach the presently claimed invention, Applicants respectfully submit that Cai does

not anticipate claim 7.

Claims 8-12 are dependent upon claim 7. Thus, for at least the same reasons advanced

above with respect to independent claim 7, Applicants respectfully submit that Cai does not

anticipate claims 8-12.

With respect to independent claim 13 in the presently claimed invention, Applicants

teach and claim as amended:

"A computer-readable medium having stored thereon a plurality of instructions, the

plurality of instructions when executed by a computer, cause the computer to perform the

method comprising:

partitioning a cache array into one or more special-purpose entries and one or

more general-purpose entries, wherein special-purpose entries are only allocated for one

or more streams having a particular stream ID, wherein the stream ID is stored outside

the cache array." (emphasis added)

Applicants teach a technique that is different from the technique taught in Cai. In

Applicants' technique, the stream ID is stored outside the cache array. In one embodiment, this

allows the sub-caches to have cross interaction and allows a stream to access data from a sub-

cache that does not belong to the stream. This interaction allows a given stream to utilize other

sub-caches in the case where other sub-caches may contain data required by the stream. In Cai,

the EID is stored within the cache. Thus, only one sub-cache may be selected for a given EID,

which prevents cross interaction between various sub-caches. Therefore, Cai does not teach the

presently claimed invention where the stream ID is stored outside the cache array. Thus, because

Cai does not teach the presently claimed invention, Applicants respectfully submit that Cai does not anticipate claim 13.

Claims 14-18 are dependent upon claim 13. Thus, for at least the same reasons advanced above with respect to independent claim 13, Applicants respectfully submit that Cai does not anticipate claims 14-18.

With respect to independent claim 19 in the presently claimed invention, Applicants teach and claim as amended:

"A system, comprising:

    means for partitioning a cache array into one or more special-purpose entries and
one or more general-purpose entries, wherein special-purpose entries are only allocated
for one or more streams having a particular stream ID, wherein the stream ID is stored
outside the cache array." (emphasis added)

Applicants teach a technique that is different from the technique taught in Cai. In Applicants' technique, the stream ID is stored outside the cache array. In one embodiment, this allows the sub-caches to have cross interaction and allows a stream to access data from a sub-cache that does not belong to the stream. This interaction allows a given stream to utilize other sub-caches in the case where other sub-caches may contain data required by the stream. In Cai, the EID is stored within the cache. Thus, only one sub-cache may be selected for a given EID, which prevents cross interaction between various sub-caches. Therefore, Cai does not teach the presently claimed invention where the stream ID is stored outside the cache array. Thus, because Cai does not teach the presently claimed invention, Applicants respectfully submit that Cai does not anticipate claim 19.

Claims 20-24 are dependent upon claim 19. Thus, for at least the same reasons advanced above with respect to independent claim 19, Applicants respectfully submit that Cai does not anticipate claims 20-24.

With respect to independent claim 25 in the presently claimed invention, Applicants teach and claim as amended:

"A system, comprising:

a system memory controller, comprising

a cache memory array partitioned into one or more special-purpose entries and one or more general-purpose entries, wherein special-purpose entries are only allocated for one or more streams having a particular stream ID, wherein the stream ID is stored outside the cache array, and

control logic coupled to the cache memory array; and system memory connected to the system memory controller." (emphasis added)

Applicants teach a technique that is different from the technique taught in Cai. In Applicants' technique, the stream ID is stored outside the cache array. In one embodiment, this allows the sub-caches to have cross interaction and allows a stream to access data from a sub-cache that does not belong to the stream. This interaction allows a given stream to utilize other sub-caches in the case where other sub-caches may contain data required by the stream. In Cai, the EID is stored within the cache. Thus, only one sub-cache may be selected for a given EID, which prevents cross interaction between various sub-caches. Therefore, Cai does not teach the presently claimed invention where the stream ID is stored outside the cache array. Thus, because Cai does not teach the presently claimed invention, Applicants respectfully submit that Cai does not anticipate claim 25.

Claims 26-29 are dependent upon claim 25. Thus, for at least the same reasons advanced above with respect to independent claim 25, Applicants respectfully submit that Cai does not anticipate claims 26-29.

With respect to independent claim 30 in the presently claimed invention, Applicants teach and claim as amended:

"A device, comprising:

a hub interface to use with a 64-bit processing architecture;

a cache memory array partitioned into one or more special-purpose entries and one or more general-purpose entries; and

control logic to allocate the one or more special-purpose entries based on a particular stream ID and a particular input address, wherein the stream ID is stored outside the cache array." (emphasis added)

Applicants teach a technique that is different from the technique taught in Cai. In Applicants' technique, the stream ID is stored outside the cache array. In one embodiment, this allows the sub-caches to have cross interaction and allows a stream to access data from a sub-cache that does not belong to the stream. This interaction allows a given stream to utilize other sub-caches in the case where other sub-caches may contain data required by the stream. In Cai, the EID is stored within the cache. Thus, only one sub-cache may be selected for a given EID, which prevents cross interaction between various sub-caches. Therefore, Cai does not teach the presently claimed invention where the stream ID is stored outside the cache array. Thus, because Cai does not teach the presently claimed invention, Applicants respectfully submit that Cai does not anticipate claim 30.

Claims 31-34 are dependent upon claim 30. Thus, for at least the same reasons advanced above with respect to independent claim 30, Applicants respectfully submit that Cai does not anticipate claims 31-34.

Accordingly, Applicants respectfully submit that the rejection under 35 U.S.C. § 102(b) has been overcome by the amendments and the remarks. Applicants submit that claims 1-34 as amended are now in condition for allowance and such action is earnestly solicited.

Claim 35 is an added claim which differs from the technique described by Cai. Although the Examiner states that Cai discloses "snoop signals," Cai describes selecting "one of the P-caches based on a comparison of the EID provided by a request and the EID values stored in the storage elements." (Cai column 5, lines 56-59) (emphasis added) Thus, in Cai, only one sub-cache is selected and it cannot be determined if a cross-access scenario exists. With respect to claim 35 in the presently claimed invention, Applicants teach and claim:

"The device as claimed in claim 9, wherein the special-purpose control logic and the general-purpose control logic further comprise logic to determine if a cross-access scenario exists."

Therefore, Cai does not teach, suggest, or render obvious Applicants' invention as claimed in claim 35. Claim 35 provides an advantage over a technique where only one sub-cache may be accessed for a given stream because if a cross-access scenario exists, a given stream may utilize other sub-caches to access data required by the stream. Applicants respectfully request the addition of claim 35.

Claim 36 is an added claim which differs from the technique described by Cai. Although the Examiner states that Cai discloses "snoop signals," Cai describes selecting "one of the P-caches based on a comparison of the EID provided by a request and the EID values stored in the storage elements." (Cai column 5, lines 56-59) (emphasis added) Thus, in Cai, only one sub-

cache is selected and it cannot be determined if a cross-access scenario exists. With respect to

claim 36 in the presently claimed invention, Applicants teach and claim:

> "The system as claimed in claim 28, wherein the special-purpose control logic
>
> and the general-purpose control logic further comprise logic to determine if a cross-
>
> access scenario exists."

Therefore, Cai does not teach, suggest, or render obvious Applicants' invention as

claimed in claim 36. Claim 36 provides an advantage over a technique where only one sub-

cache may be accessed for a given stream because if a cross-access scenario exists, a given

stream may utilize other sub-caches to access data required by the stream. Applicants

respectfully request the addition of claim 36.

Claim 37 is an added claim which differs from the technique described by Cai. Although

the Examiner states that Cai discloses "snoop signals," Cai describes selecting "one of the P-

caches based on a comparison of the EID provided by a request and the EID values stored in the

storage elements." (Cai column 5, lines 56-59) (emphasis added) Thus, in Cai, only one sub-

cache is selected and it cannot be determined if a cross-access scenario exists. With respect to

claim 37 in the presently claimed invention, Applicants teach and claim:

> "The device as claimed in claim 31, wherein the special-purpose control logic and
>
> the general-purpose control logic further comprise logic to determine if a cross-access
>
> scenario exists."

Therefore, Cai does not teach, suggest, or render obvious Applicants' invention as

claimed in claim 37. Claim 37 provides an advantage over a technique where only one sub-

cache may be accessed for a given stream because if a cross-access scenario exists, a given

stream may utilize other sub-caches to access data required by the stream. Applicants

respectfully request the addition of claim 37.

Claims 38-40 are added claims which differ from the technique described by <u>Cai</u>. Although the Examiner states that <u>Cai</u> discloses "snoop signals," <u>Cai</u> describes selecting "<u>one</u> of the P-caches based on a comparison of the EID provided by a request and <u>the EID values stored in the storage elements</u>." (<u>Cai</u> column 5, lines 56-59) (emphasis added) Thus, in <u>Cai</u>, only one sub-cache is selected because the EID value is stored in the storage elements and thus, <u>Cai</u>'s technique does not permit cross-access between the P-caches. Therefore, <u>Cai</u> does not teach, suggest, or render obvious Applicants' invention as claimed in claims 38-40. Claims 38-40 provide an advantage over a technique where only one sub-cache may be accessed for a given stream because if a cross-access scenario exists, a given stream may utilize other sub-caches to access data required by the stream. Applicants respectfully request the addition of claims 38-40.

If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.

Respectfully submitted,

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

Date: ___6/30/06___

By: _____
Michael J. Mallie
Reg. No. 36,591

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025
(408) 720-8300